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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,724	04/06/2006	Thomas Beck	2003P10483WOUS	1920
22116 7590 11/18/2009 SIEMENS CORPORATION INTELLECTUAL PROPERTY DEPARTMENT 170 WOOD AVENUE SOUTH ISELIN, NJ 08830				
EXAMINER				
PAIK, SANG YEOP				
ART UNIT		PAPER NUMBER		
3742				
MAIL DATE		DELIVERY MODE		
11/18/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/574,724

Applicant(s)

BECK ET AL.

Examiner

SANG Y. PAIK

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Owen et al (US 5,841,099) in view of in view of Neil et al (US 6,809,291), Kobayashi et al (US 2004/0173942), and Kelley et al (US 5,693,600)

Owen shows a method for producing a hole in a component made of a nickel layer with a ceramic substrate by pulsed laser beams wherein the hole comprises a first region with sloped walls and a second region, the laser beams include plurality of laser pulse lengths having a first laser pulse of a high power density for processing the first region of the sloped outer wall region and a second laser pulse of a lower power density for processing the second region. But, Owen does not show that the second laser pulse that is a longer laser pulse for processing the component including a superalloy metal turbine.

Neil shows that it is known to provide a first short pulse laser followed by second a longer pulse laser for processing or machining metal alloys, ceramics, polymers, or other materials. Neil shows that the short pulse laser having an ultrashort pulse having a pulse length in the range of 100-600 femtoseconds wherein the longer pulse length in

the range of 100 ns to 1 ms, and Neil further shows the ultrashort pulse produces a faster machining of the surface with a minimum heating affect with no craking or melting wherein the second laser would sustain and enlarge the beamed area.

Kobayashi also shows that it is known to provide a laser for producing a hole with a short laser pulse of a high power in a first region of the hole which is the top or outer region of the hole with a longer later pulse of a lower power for producing a second region of the hole which is the inner region of the hole.

Kelley shows that it is well known in the art produce a laser hole in a superalloy metal turbine that is made of a nickel based alloy.

In view of Neil and Kobayashi, it would have been obvious to adapt Neil or Kobayashi with only the first short laser pulse which is known to provide a faster machining of the surface without cracking or melting in a high power while providing only the second longer laser pulse to enlarge lengthwise the inner region of the hole with a lower power for a clean hole formation; and in view of Kelley, it would have been obvious to adapt the method shown in Owen produce a hole in a superally metal turbine by means of laser pulse applications which is well known in the art as a suitable means to form such holes.

3. Claims 22-26, 28-36, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Owen in view of in view of Neil, Kobayashi, and Kelley as applied to claims 20 and 21 above, and further in view of Mead et al (US 6,541,731).

Owen in view of in view of Neil, Kobayashi, and Kelley shows the method claimed except a plurality of mirrors for directing the beams one at a time or simultaneously.

Mead shows that it is known in the art to provide a plurality of laser beam sources with a plurality of mirrors to direct the laser beams one at a time or simultaneously as illustrated in Figures 5, 6, and 8.

In view of Mead, it would have been obvious to one of ordinary skill in the art to adapt Kelly, as modified by Owen, as modified by Neil, Kobayashi, and Kelley, with a plurality of mirrors to either provide the laser beams one at a time or simultaneously to affect the desired laser beam intensity or dimensions.

4. Claims 27 and 37 rejected under 35 U.S.C. 103(a) as being unpatentable over Owen in view of in view of Neil, Kobayashi, Kelley, and Mead as applied to claims 22-26, 28-36, 38 and 39 above, and further in view of Mega et al (US 2004/0169022).

Owen in view of in view of Neil, Kobayashi, Kelley, and Mead shows the method claimed except for a metallic layer having the recited composition.

Mega shows that it is known in the art that a turbine or a turbine blade is made of a nickel based superalloy further having chromium, aluminum, titanium which is well known to be a rare earth element.

In view of Mega, it would have been obvious to one of ordinary skill in the art to adapt Owen, as modified by Neil, Kobayashi, Kelley, and Mead, with a metallic layer made of the recited composition which is well known to be a suitable material for a turbine that has high thermal resistance.

Response to Arguments

5. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SANG Y. PAIK whose telephone number is (571) 272-4783. The examiner can normally be reached on M-F (9:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571) 272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SANG Y PAIK/

Primary Examiner, Art Unit 3742